REMARKS

Applicants respectfully request that the application be reconsidered in view of the above amendments and the following remarks. Claims 1, 8, 14 and 27 have been canceled by the present amendment. Furthermore, dependent claims 11, 20 and 28 have been amended merely to rewrite the claims in independent form. Claims 11, 20 and 28, thus, have not been narrowed by the present amendment. Claims 2, 7, 9-10, and 12-13 have been amended to depend from claim 11. Claims 15-16, 19 and 24-26 have been amended to depend from claim 20. Reconsideration of the outstanding rejections of claims 1-40 is respectfully requested in view of the following remarks.

Claims 1, 8, 9, 14, 27 and 35 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,546,210 (hereinafter "CHRAPLYVY I"). Claims 1, 8, 14 and 27 have been canceled by the present amendment, therefore, the rejection of these claims is moot. Claim 9 has been amended to depend from claim 11 and is further discussed below. Applicants respectfully traverse the rejection of claim 35.

CHRAPLYVY I discloses a system that uses passive couplers 30, 31 and 32 to multiplex the outputs of eight external-cavity lasers (λ_1 - λ_8). The multiplexed outputs of couplers 30 and 31 are amplified by erbium-doped fiber amplifiers (EDFAs) 33 and 34, respectively. The multiplexed output of coupler 32 is modulated by modulator 35 to produce a 10 Gb/s pseudorandom bit stream for transmission via an optical fiber 36. CHRAPLYVY I, thus, discloses a system that *multiplexes* and amplifies the outputs of several lasers. CHRAPLYVY I does not disclose, or even suggest, "*demultiplexing* the optical signals into subgroups of optical signals," "*demultiplexing* the optical signals within a respective subgroup of optical signals into individual channels," or amplifying each of the

demultiplexed "subgroups of optical signals using a different optical line amplifier for each subgroup" as claimed. CHRAPLYVY I, therefore, does not anticipate the invention recited in claim 35. Withdrawal of this rejection is, thus, respectfully requested.

Claims 29-34 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,041,152 (hereinafter "CLARK"). Applicants respectfully traverse.

CLARK discloses a wavelength division multiplexing (WDM) system that includes a pair of bi-directional combiners 1 and 2 (FIG. 1) disposed at opposite ends of a fiber optic line 3. Each of the combiners 1 and 2 perform channel combining, or multiplexing, functions and channel separation, or demultiplexing, functions. Combiner 1 further connects to multiplexers 4 and 5 and to demultiplexers 6 and 7. Combiner 2 further connects to multiplexers 8 and 9 and demultiplexers 10 and 11. The WDM system of CLARK, thus, multiplexes optical channels onto a single fiber optical line at one end of the line and demultiplexes the multiplexed optical channels from the optical line at the other end of the line. CLARK does not suggest or disclose "optical line amplifiers associated with each of the at least one fine wavelength division multiplexing/demultiplexing units and configured to amplify optical signals within a respective subwindow corresponding to each respective subgroup of optical signals." CLARK, therefore, does not anticipate the invention recited in claim 29. Withdrawal of this rejection is, thus, respectfully requested.

Claims 30-34 depend from claim 29. Claims 30-34, therefore, patentably distinguish over CLARK for at least the reasons set forth with respect to claim 29 above.

Claims 29-30 and 34 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 5,748,350 (hereinafter "PAN *et al.*"). Applicants respectfully traverse.

PAN *et al.* discloses a multiplexer device that use optical circulators, fiber Bragg gratings, and bandpass wavelength division units for multiplexing optical signals comprising a set of wavelengths (λ_1 - λ_8). As illustrated in FIG. 1A, bandpass wavelength division units 14 and 15 of the multiplexer connect to input optical fibers that each carry optical signals of different wavelengths (λ_1, λ_3, λ_5, λ_7 or λ_2, λ_4, λ_6, λ_8). Bandpass wavelength division unit 15 further includes fiber Bragg gratings that reflect the wavelengths carried by bandpass wavelength division unit 14 (λ_2, λ_4, λ_6, λ_8). Optical circulator 13 passes the signals received from bandpass wavelength division units 14 and 15 to output optical fiber 10. PAN *et al.*, therefore, discloses bandpass wavelength division units that multiplex optical signals into subgroups of optical signals (λ_1, λ_3, λ_5, λ_7; λ_2, λ_4, λ_6, λ_8) and an optical circulator for further multiplexing the subgroups of optical signals into a single group of signals (λ_1 - λ_8) for transmission on an optical fiber. Pan *et al.* does not suggest or disclose "optical line amplifiers associated with each of the at least one fine wavelength division multiplexing/demultiplexing units and configured to amplify optical signals within a respective subwindow corresponding to each respective subgroup of optical signals" as recited in claim 29. Pan *et al.*, therefore, does not anticipate the invention recited in claim 29. Withdrawal of this rejection is, thus, respectfully requested.

Claims 30 and 34 depend from claim 29. Claims 30 and 34, therefore, patentably distinguish over PAN *et al.* for at least the reasons set forth with respect to claim 29 above.

Claims 29-30, 32, 34-36, 38 and 40 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 5,841,557 (hereinafter "OTSUKA *et al.*"). Applicants respectfully traverse.

OTSUKA *et al.* discloses a system and method for scrambling the polarization of optical signals that have been combined, using wavelength division multiplexing, into combined optical signals. In a representative embodiment shown in FIG. 15, and described in column 19, line 30 through column 20, line 2, optical signals are transmitted via "signal light transmission sections" (e.g., 12N-1, 12W-(2i-1)) that are associated with optical channels (e.g., ch. 1(W), ch. 2i-1(W), etc.). Optical signals transmitted via the signal light transmission sections are combined in first "wave combiners" (e.g., 13-1, 13-2, 13-3, 13-4). The signals from the first wave combiners are further combined in second "wave combiners" (e.g., 13-5, 13-6) and in a third "wave combiner" 13-7. The combined optical signal output from "wave combiner" 13-7 is input into a polarization scrambler 14W-1 before amplification by an amplifier 18W. Alternatively, in the event of the failure of amplifier 18W, the combined optical signal output from "wave combiner" 3-7 can be amplified by backup amplifier 18P (see column 19, lines 41-54). OTSUKA *et al.*, thus, discloses the multiplexing of optical signals into a combined optical signal output which is then amplified.

In contrast to OTSUKA *et al.*, claim 29 recites a "coarse wavelength division multiplexing/demultiplexing unit" that "*demultiplexes* the optical signals into subgroups of optical signals in corresponding subwindows within said operating window," "at least one fine wavelength division multiplexing/demultiplexing unit" that "*demultiplexes* the optical signals within a respective group of optical signals into individual channels within a corresponding window," and "optical line amplifiers associated with each of the at least one fine wavelength division multiplexing/demultiplexing units and configured to amplify optical signals within a respective subwindow corresponding to each respective subgroup of optical signals." Applicants respectfully submit that OTSUKA *et al.* merely teaches the

multiplexing of individual optical channels (ch.1 (W), ch.1 (P), ch. 2i-1(W); FIG. 15) into subgroups of optical signals using wave combiners 13-5, 13-6 and 13-7 and does not suggest or disclose the demultiplexing operation recited in claim 29. Furthermore, OTSUKA *et al.* does not suggest or disclose optical line amplifiers configured "to amplify optical signals within a respective subwindow corresponding to each respective subgroup of optical signals" as claimed. OTSUKA *et al.*, therefore, does not anticipate claim 29 and withdrawal of the rejection is respectfully requested.

Claims 30, 32 and 34 variously depend from claim 29. Claims 30, 32 and 34, therefore, patentably distinguish over OTSUKA *et al.* for at least the reasons set forth with respect to claim 29 above.

Claim 34 depends from claim 29. Claim 34, therefore, patentably distinguishes over OTSUKA *et al.* for at least the reasons set forth with respect to claim 29 above. Furthermore, claim 34 recites additional features not suggested or disclosed by OTSUKA *et al.* The Office Action alleges that OTSUKA *et al.* discloses a fine WDM unit that comprises "first (13-1, FIG. 24), second (13-2, FIG. 24), third (13-3, FIG. 24), and fourth (13-M, FIG. 24) fine WDM units." Applicants respectfully submit, however, that the Office Action does not address the features of the claim. Claim 34 recites, among other things, "said first, second, third, and fourth fine wavelength division multiplexing units further multiplexing said first, second, third and fourth subgroups of optical signals by wavelength *into channels* for carrying optical signals having different wavelengths...." Applicants respectfully submit that OTSUKA *et al.* merely teaches the multiplexing of individual optical channels (ch.1 (W), ch.1 (P), ch. 2i-1(W); FIG. 15) into subgroups of optical signals using wave combiners 13-5, 13-6 and 13-7. OTSUKA *et al.* contains no teaching or suggestion of "demultiplexing said

first, second, third and fourth subgroups of optical signals by wavelength into channels" as recited in claim 34. Applicants, therefore, respectfully submit that OTSUKA *et al.* does not anticipate the invention of claim 34. Withdrawal of the rejection of claim 34 is, therefore, respectfully requested.

Claim 35 recites features similar to those discussed above with respect to claim 29. Claim 35, therefore, patentably distinguishes over OTSUKA *et al.* for similar reasons to those set forth with respect to claim 29 above.

Claims 36 and 38 depend from claim 35. Claims 36 and 38, therefore, patentably distinguish over OTSUKA *et al.* for at least the reasons to those set forth with respect to claim 35 above.

Claim 40 recites similar features to those discussed above with respect to claim 34. Claim 40, therefore, patentably distinguishes over OTSUKA *et al.* for similar reasons to those set forth with respect to claim 34 above.

Claims 1, 7-10, 14, 16, 20 and 27 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA *et al.* in view of U.S. Patent No. 5,907,420 (hereinafter "CHRAPLYVY II"). Claims 1, 8, 14 and 27 have been canceled by the present amendment, therefore, the rejection of these claims is moot. Claims 7 and 9-10 have been amended to depend from claim 11 and are discussed below. Applicants respectfully traverse the rejection of claims 16 and 20.

As discussed above, OTSUKA *et al.* merely discloses the amplification of a combined optical signal output from "wave combiners" (e.g., 13-7; FIG. 15) by a single amplifier (e.g, 18; FIG. 15). As admitted by the Office Action, OTSUKA *et al.* contains no suggestion or teaching of "amplifying each of said subgroups of optical signals associated with said

plurality of subwindows within the operating window using a different optical line amplifier for each subgroup" as recited in claim 20. The Office Action alleges that CHRAPLYVY II discloses these features. Applicants submit, however, that CHRAPLYVY II merely discloses the use of several erbium doped fiber amplifiers (EDFA #1-#8; FIG. 2), connected in series, to amplify an entire operating window comprising wavelengths λ_1, λ_2, λ_3, λ_4, λ_5, λ_6, λ_7, and λ_8 supplied by tunable lasers (see FIG. 2 and column 4, lines 7-15). CHRAPLYVY II contains no teaching, or even a suggestion, of amplifying subgroups of optical signals associated with different subwindows of a plurality of subwindows using a different optical line amplifier for each subgroup, as recited in claim 20. Therefore, since OTSUKA *et al.* or CHRAPLYVY II, either singly or in combination, do not disclose the combination of features recited in claim 20, withdrawal of the rejection of claim 20 is respectfully requested.

Claim 16 depends from claim 20 and, therefore, patentably distinguishes over OTSUKA *et al.* and CHRAPLYVY II, whether taken alone or in any reasonable combination, for at least the reasons set forth with respect to claim 20 above.

Claims 31-33 and 37-39 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA *et al.* in view of U.S. Patent No. 5,946,117 (hereinafter "MELI *et al.*"). The Office Action cites MELI *et al.* for allegedly disclosing various features of claims 31-33 and 37-39 which depend, respectively, from claims 29 and 35. Applicants respectfully submit, however, that MELI *et al.* does not remedy the deficiencies of OTSUKA *et al.* discussed above with respect to claims 29 and 35. Applicants, therefore, respectfully request withdrawal of the rejections of claims 31-33 and 37-39 for at least the reasons set forth above with respect to claims 29 and 35.

Claims 2-6, 15 and 17-19 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA *et al.* in view of CHRAPLYVY II and MELI *et al.* Claims 15 and 17-19 have been amended to depend from claim 20. Applicants respectfully submit that MELI *et al.* does not remedy the deficiencies of OTSUKA *et al.* and CHRAPLYVY II discussed above with respect to claim 20. Claims 2-6 have been amended to depend from claim 11. Applicants respectfully submit that MELI *et al.* does not remedy the deficiencies of OTSUKA *et al.*, CHRAPLYVY II, and BAKER (U.S. Patent No. 5,452,124) discussed below with respect to claim 11. Applicants, therefore, respectfully request withdrawal of the rejections of claims 2-6, 15 and 17-19 for at least the reasons set forth below and above with respect to claims 11 and 20.

Claims 11-12 and 21-25 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA *et al.* in view of CHRAPLYVY II and U.S. Patent No. 5,452,124 (hereinafter "BAKER"). The Office Action cites BAKER as allegedly disclosing various features of claims 12 and 21-25, which depend, respectively, from claims 11 and 20. Applicants respectfully submit, however, that BAKER does not remedy the deficiencies of OTSUKA *et al.* and CHRAPLYVY II discussed above with respect to claim 20. Claims 21-25, therefore, patentably distinguish over OTSUKA *et al.* in view of CHRAPLYVY II and BAKER for at least the reasons given above with respect to claim 20.

Furthermore, Applicants note that claim 11 recites "optical line amplifier" features similar to those discussed above with respect to claim 20. Claim 11, therefore, patentably distinguishes over OTSUKA *et al.* and CHRAPLYVY II for reasons similar to those set forth with respect to claim 20. Claim 12 depends from claim 11 and, thus, patentably distinguishes over OTSUKA *et al.* in view of CHRAPLYVY II and BAKER for at least the reasons given

above with respect to claim 20. Withdrawal of the rejection of claims 11-12 and 21-25 is respectfully requested for at least the foregoing reasons.

Claims 13, 26 and 28 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA *et al.* in view of CHRAPLYVY II and U.S. Patent No. 5,886,804 (hereinafter "ONAKA *et al.*"). The Office Action cites ONAKA *et al.* as allegedly disclosing various features of claims 13 and 26, which depend, respectively, from claims 11 and 20. Applicants respectfully submit, however, that ONAKA *et al.* does not remedy the deficiencies of OTSUKA *et al.* and CHRAPLYVY II discussed above with respect to claims 11 and 20. Claim 28 recites "optical line amplifier" features similar to those discussed above with respect to claim 20. Claim 28, therefore, patentably distinguishes over OTSUKA *et al.* and CHRAPLYVY II for reasons similar to those discussed above with respect to claim 20. Withdrawal of the rejections of claims 13, 26 and 28 is respectfully requested for at least the foregoing reasons.

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of this application, and the timely allowance of the pending claims. To the extent necessary, a petition for an extension of time under 37 CFR 1.136 is hereby made. Please change any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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MARKED-UP VERSION OF AMENDMENT SHOWING CHANGES MADE

Please amend claims 2, 7, 9-13, 15-16, 19-21, 24, 26, 28-29 and 34-35 to the following:

2. (Amended) The system of claim [1] 11, wherein the operating window comprises an erbium band of wavelengths between approximately 1520 nm and 1561 nm, and each optical line amplifier includes at least one fiber amplifier.

7. (Twice Amended) The system of claim [1] 11, wherein said first multiplexing unit comprises:

a first coarse wavelength division multiplexing unit configured to multiplex the optical signals in the set of multiple channels into first, second, third, and fourth subgroups of optical signals depending upon wavelength in corresponding first, second, third, and fourth subwindows within the operating window; and

first, second, third, and fourth fine wavelength division multiplexing units optically coupled in parallel between said first coarse wavelength division multiplexing unit and said plurality of optical line amplifiers, said first, second, third and fourth fine wavelength division multiplexing units further configured to multiplex said first, second, third, and fourth subgroups of optical signals by wavelength into channels for carrying optical signals having different wavelengths within corresponding first, second, third and fourth subwindows.

9. (Amended) The system of claim [1] 11, wherein said first multiplexing unit comprises a coarse WDM unit and at least one fine WDM unit, whereby fine WDM units can

be added to the system in a modular fashion to support channels in respective subwindows as needed.

10. (Amended) The system of claim [8] 11, wherein said at least one optical fiber comprises at least one single mode optical fiber selected from the following types of single-mode optical fiber: non-dispersion-shifted optical fiber, zero-dispersion shifted optical fiber, and low slope dispersion-shifted optical fiber.

11. (Twice Amended) [The system of claim 8] A system for amplifying optical signals in a set of multiple channels in an operating window of a fiber communication network, comprising:

a plurality of subwindows within said operating window;

a first multiplexing unit configured to multiplex the optical signals in the set of multiple channels into a plurality of subgroups of optical signals, each subgroup associated with one of said plurality of subwindows within the operating window, such that each subwindow corresponds to and is associated with a different group of channels within the operating window;

a plurality of optical line amplifiers, each amplifier configured to amplify a subgroup of optical signals associated with a different subwindow of said plurality of subwindows within the operating window;

a second multiplexing unit configured to multiplex the optical signals in the set of multiple channels into said at least one subgroup of optical signals in a respective subwindow of said plurality of subwindows within the operating window; and

a plurality of optical fibers coupled between said first and second multiplexing units, each of said plurality of optical line amplifiers optically coupled to one of said plurality of optical fibers to amplify said subgroups of optical signals corresponding to respective subwindows within the operating window,

wherein said first and second multiplexing units are arranged at first and second sites, each of said plurality of optical line amplifiers and each of said plurality of optical fibers configured to transport optical signals traveling in at least one of uni-directional traffic and bi-directional traffic between said first and second sites.

12. (Three Times Amended) The system of claim [1] 11, wherein said plurality of optical line amplifiers comprise first to fourth line amplifiers, said plurality of subgroups of optical signals comprise first to fourth subgroups of optical signals in corresponding first to fourth subwindows within the operating window, and further comprising:

a second multiplexing unit configured to multiplex the optical signals in the set of multiple channels into said first to fourth subgroups of optical signals in corresponding first to fourth subwindows within the operating window, each subwindow corresponding to a different group of channels within the operating window; and

first to fourth optical fibers arranged in parallel between said first and second multiplexing units, said first to fourth optical line amplifiers optically coupled along said first to fourth optical fibers, respectively, and configured to amplify said first to fourth subgroups of optical signals corresponding to said first to fourth subwindows within the operating window;

wherein said first and second multiplexing units are arranged at first and second sites, and said first and third optical line amplifiers and said first and third optical fibers each configured to pass optical signals traveling in a first direction between said first and second sites, and said second and fourth optical fibers each configured to pass optical signals traveling in a second direction between said first and second sites opposite to said first direction.

13. (Twice Amended) The system of claim [1] 11, wherein each of said plurality of optical line amplifiers further includes a dispersion compensation device, and wherein subgroups of optical signals corresponding to respective subwindows within the operating window are amplified for each subwindow to make amplifier gain approximately equal across the channels in the operating window.

15. (Amended) The method of claim [14] 20, wherein the operating window comprises an erbium band of wavelengths between approximately 1520 nm and 1561 nm having four subwindows, and said multiplexing step multiplexes the optical signals in the set of multiple channels into four subgroups of optical signals in respective subwindows within the operating window, and said amplifying step amplifies in parallel said four subgroups of optical signals.

16. (Amended) The method of claim [14] 20, wherein said multiplexing step comprises the step of coarse multiplexing the optical signals in the set of multiple channels into first, second, third and fourth subgroups of optical signals depending upon wavelength in corresponding first, second, third and fourth subwindows within the operating window,

said first subwindow includes a first group of channels,

said second subwindow includes a second group of channels,

said third subwindow includes a third group of channels, and

said fourth subwindow includes a fourth group of channels.

19. (Amended) The method of claim [14] 20, wherein said multiplexing step multiplexes optical signals in the operating window into first to sixteenth channels having the following approximate wavelengths:

Channel No.	Approximate Wavelength (nm)
1	1530.33
2	1531.90
3	1533.47
4	1535.04
5	1538.19
6	1539.77
7	1541.35
8	1542.94
9	1547.72

10	1549.32
11	1550.92
12	1552.52
13	1555.75
14	1557.36
15	1558.98
16	1560.61

20. (Twice Amended) [The method of claim 14] A method of amplifying optical signals in a set of multiple channels in an operating window of a fiber communication network, comprising:

providing a plurality of subwindows within said operating window;

multiplexing the optical signals in the set of multiple channels into a plurality of subgroups of optical signals, each subgroup associated with one of said plurality of subwindows within the operating window, such that each subwindow corresponds to and is associated with a different group of channels within the operating window; and

amplifying each of said subgroups of optical signals associated with said plurality of subwindows within the operating window using a different optical line amplifier for each subgroup,

wherein said multiplexing further comprises:

coarse wavelength division multiplexing the optical signals in the set of multiple channels into first, second, third, and fourth subgroups of optical signals depending upon

wavelength in corresponding first, second, third, and fourth subwindows within the operating window; and

fine wavelength division multiplexing said first, second, third, and fourth subgroups of optical signals by wavelength into channels for carrying optical signals having different wavelengths within corresponding first, second, third, and fourth subwindows.

21. (Amended) The method of claim [14] 20, wherein said multiplexing step is performed at a first site, and further comprising the steps of:

multiplexing at a second site the optical signals in the set of multiple channels in said at least one subgroup of optical signals in said at least one corresponding subwindow within the operating window; and

passing said at least one subgroup of optical signals corresponding to said subwindow within the operating window over an optical path extending between said first and second sites.

24. (Amended) The method of claim [14] 20, wherein said at least one subgroup of optical signals comprises first to fourth subgroups of optical signals in corresponding first to fourth subwindows within the operating window, and further comprising the steps of:

passing optical signals in said first and third subwindows in a first direction between first and second sites; and

passing optical signals in said second and fourth subwindows in a second direction between first and second sites.

26. (Twice Amended) The method of claim [14] 20, further comprising the step of compensating dispersion magnitude separately for each subwindow, and wherein said subgroups of optical signals corresponding to said subwindows within the operating window are amplified for each subwindow to make amplifier gain approximately equal across the channels in the operating window.

28. (Three Times Amended) [The system of claim 27,] A system for modular amplification of optical signals in a set of multiple channels in an erbium band operating window of a fiber communication network, comprising:

first and second wavelength division multiplexing units, wherein said first and second wavelength division multiplexing units each comprise a coarse WDM unit and at least one fine WDM unit; wherein fine WDM units can be added to the system in a modular fashion to support channels in respective subwindows of said operating window as needed;

a fiber link, having at least one optical fiber, optically coupling said first and second wavelength division multiplexing units;

optical line amplifiers associated with each fine WDM unit and configured to amplify optical signals within a respective subwindow corresponding to each fine WDM unit; and

[further comprising] dispersion compensation units provided along said at least one optical fiber in said fiber link, and wherein optical line amplifiers and dispersion compensation units can be added to the system in a modular fashion to support channels in respective subwindows as needed.

29. (Twice Amended) A wavelength division multiplexing system for multiplexing optical signals in a set of multiple channels within an operating window of a fiber communication network, comprising:

a coarse wavelength division multiplexing/demultiplexing unit; and

at least one fine wavelength division multiplexing/demultiplexing unit; wherein,

said coarse wavelength division multiplexing/demultiplexing unit [multiplexes] demultiplexes the optical signals into subgroups of optical signals in corresponding subwindows within said operating window, each subwindow corresponding to a different group of channels within said operating window, and

each fine wavelength division multiplexing/demultiplexing unit [multiplexes] demultiplexes the optical signals within a respective subgroup of optical signals into individual channels within a corresponding subwindow; and

optical line amplifiers associated with each of the at least one fine wavelength division multiplexing/demultiplexing units and configured to amplify optical signals within a respective subwindow corresponding to each respective subgroup of optical signals.

34. (Twice Amended) The system of claim 29, wherein:

said coarse multiplexing/demultiplexing unit comprises a first coarse wavelength division multiplexing/demultiplexing unit configured to [multiplex] demultiplex said optical signals in said set of multiple channels into first, second, third, and fourth subgroups of optical signals depending upon wavelength in corresponding first, second, third, and fourth subwindows within the operating window; and

said at least one fine wavelength division multiplexing/demultiplexing unit comprises first, second, third, and fourth fine wavelength division multiplexing/demultiplexing units optically coupled to said first coarse wavelength division multiplexing/demultiplexing unit, said first, second, third, and fourth fine wavelength division multiplexing/demultiplexing units further [multiplexing] demultiplexing said first, second, third, and fourth subgroups of optical signals by wavelength into channels for carrying optical signals having different wavelengths within corresponding first, second, third, and fourth subwindows.

35. (Twice Amended) A method of multiplexing optical signals in a set of multiple channels within an operating window of a fiber communication network, comprising:

coarse wavelength division [multiplexing] demultiplexing the optical signals into subgroups of optical signals in corresponding subwindows within said operating window, each subwindow corresponding to a different group of channels within said operating window; and

fine wavelength division [multiplexing] demultiplexing the optical signals within a respective subgroup of optical signals into individual channels within [in] a corresponding subwindow;

amplifying each of said subgroups of optical signals using a different optical line amplifier for each subgroup.